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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,646	11/07/2001	Sujatha Ramanujan	83509NAB	5815

7590 02/03/2004

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EXAMINER
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SHAPIRO, LEONID

ART UNIT	PAPER NUMBER
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2673

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DATE MAILED: 02/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/036,646

Applicant(s)

RAMANUJAN, RUJATHA

Examiner

Leonid Shapiro

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 84-86 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 84-86 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____.  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: ____.                                    |

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This application contains claims 22-83, 87 drawn to an invention nonelected with traverse in Paper No. 6. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “a control logic processor for modulating a bias voltage to spatial light modulator, bias voltage modulation synchronous with periodic attenuation of variable filter” and “display image is image retentive” and interchangeably mounting either direct-view projection lenses or screen projection lens, an intensity or hue operator control with touchpad, with variable filter being interchangeable must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 8, 11-17 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was

described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Description do not mention image-retentive display surface, interchangeably mounting either direct-view projection lenses or screen projection lens, an intensity or hue operator control with touchpad, variable filter is interchangeable.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 6-7, 9-10, 18-19, 21, 84-86 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richards (US Patent No. 6,388,661 B1) in view of Tanaka et al. (US Patent No. 6,388,649 B1).

As to claim 1, Richards teaches a display apparatus for projection of an image-caring beam from digital data on display surface (See Fig. 1, items 204, 210, in description See from Col. 1, Line 64 to Col. 2, Line 29), the apparatus comprising: a light source for providing a beam of multicolor light (See Fig. 1, item 200, in description See Col. 1, Lines 65-66); a variable filter disposed to provide a periodic attenuation of a range of component wavelengths of beam of multicolor light in order to provide tinted beam (See Fig. 1, item 212, in description See Col. 2, Lines 21-22); spatial light modulator for modulating variably tinted beam according to

the digital data to provide image-carrying beam (See Fig. 1, item 204, in description See from Col. 1, Line 64 to Col. 2, Line 3).

Richards does not show a control logic processor for modulating a bias voltage to spatial light modulator, bias voltage modulation synchronous with periodic attenuation of variable filter.

Tanaka et al. teaches to maintain input/output light intensity characteristics of an SLM constant by using a control logic processor (See Fig. 21, items 2110-2112, in description See Col. 26, Lines 31-59) for modulating a bias voltage to spatial light modulator (See Fig. 21, item 2103) synchronous with screen intensity (See Fig. 1, items 2107, 2109).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate SLM with a control logic processor as shown by Tanaka et al. in Richards apparatus to synchronize the voltage modulation with periodic attenuation of variable filter in order to perform a monochrome on the screen (See Col. 28, Lines 47-48 in the Tanaka et al. Reference).

As to claim 84, Richards teaches in a digital display apparatus (See Fig. 1, items 204, 210, in description See from Col. 1, Line 64 to Col. 2, Line 29) using a spatial light modulator to modulate a monochromatic image for projection onto a display surface (See Fig. 1, item 204, in description See from Col. 1, Line 64 to Col. 2, Line 3), a method for adjusting the hue of monochromatic image comprising: providing a light source in a repeated sequence (See Fig. 1, item 200, in description See Col. 1, Lines 65-66); wherein component colors are attenuated (See Fig. 1, item 212, in description See Col. 2, Lines 21-22).

Richards does not show providing to spatial light modulator a repeated sequence of variable bias voltages in synchronization with repeated sequence of component color attenuation,

the level of each variable bias voltage being adjustable in order to affect adjustment of the hue of monochrome image.

Tanaka et al. teaches to maintain input/output light intensity characteristics of an SLM constant by using a control logic processor (See Fig. 21, items 2110-2112, in description See Col. 26, Lines 31-59) for modulating a bias voltage to spatial light modulator (See Fig. 21, item 2103) synchronous with screen intensity (See Fig. 1, items 2107, 2109).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate SLM with a control logic processor as shown by Tanaka et al. in Richards apparatus to synchronize the voltage modulation with periodic attenuation of variable filter in order to perform a monochrome on the screen (See Col. 28, Lines 47-48 in the Tanaka et al. Reference).

As to claim 2, Tanaka et al. teaches SLM is reflective liquid crystal device (See Fig. 21, item 2103).

As to claim 3, Richards teaches SLM is transmissive liquid crystal device (See Fig. 3, item 401, in description See Col. 3, Lines 26-44).

As to claim 4, Tanaka et al. teaches SLM is digital micromirror device (See Fig. 21, item 2103).

As to claims 6-7, Richards teaches viewing screen which could be a direct-view display surface or a projection screen (See Fig. 1, item 210, in description See Col. 2, Lines 14-15).

As to claims 9-10, Richards teaches projection optics for projection of image-carrying beam onto direct-view surface or projection screen (See Fig. 1, item 208, in description See Col. 2, Lines 14-15).

As to claims 18-19, 85-86 Richards teaches variable filter is stationary and rotates in the path of light source (See Fig. 1, item 212, in description See Col. 2, Lines 17-29).

As to claim 21, Richards teaches light source comprises LED (See in Description Col. 2, Lines 30-34).

4. Claims 5 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richards and Tanaka et al. as applied to claim 1 above, and further in view of Dawson (Pub. NO.: US 2002/0021832 A1).

Richards and Tanaka et al. do not show variable filter modulates birefringence.

Dawson teaches Variable Birefringence Polarized Interference Filters (See in description page 12, paragraph 0247).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Dawson Birefringence Filters in Richards apparatus to provide a beam of multicolor light.

#### ***Telephone inquire***

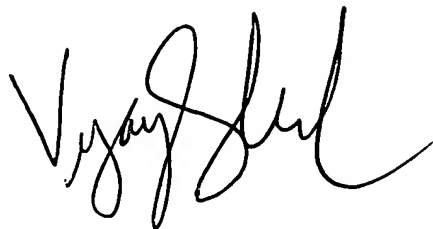
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 703-305-5661. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703-305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Is

A handwritten signature in black ink, appearing to read 'Vijay Shankar', with a stylized, cursive script.

**VIJAY SHANKAR  
PRIMARY EXAMINER**